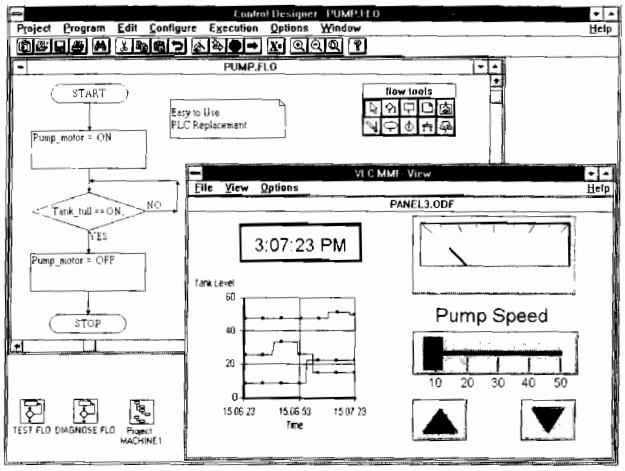
Visual Logic Controller — The Easy Choice for PLC Replacement



With Steeplechase Software's Visual Logic Controller, your PC becomes a high-speed replacement for PLC processor, programmer, and operator interface.

Use Your PC for Control

You can easily turn a desktop or industrial PC into a high-speed machine controller — and combine a PLC processor, programming terminal, and operator interface in a single system that costs up to 50% less.

Just run Steeplechase Software's Visual Logic Controller™ (VLC™) on your Windows-based computer, enter your control program, and design your operator screens. If you know how to point, click and drag, then you already know how to use our software. We've made it so easy to use, you don't even need training.

When you're ready to test out your program, you can first use the built-in simulator: force your inputs, monitor your outputs, and watch the execution of your flow charts. Then plug in the I/O system of your choice, and run your machine directly from your computer.

Steeplechase has also improved the control language itself. Instead of converting your machine sequences to relay ladder diagrams, you draw them the way you think of them: as flow charts. Everyone understands flow charts, even when they were drawn by someone else!

With our software and your I/O, your PC transforms into a high-speed controller for assembly machines, conveying systems, production test equipment, and other critical manufacturing machinery.

Highlights

Slash control system costs — Your PC can replace three separate components: PLC programming terminal, PLC processor, and operator interface — at a savings of 50% or more.

Speed program development — Our graphical flow charts make programming so much easier and faster, you can finish your application in a fraction of the time.

Improve uptime — If the machine stops, you can instantly pinpoint in the flow chart where the machine halted. Reduce diagnostic time from many minutes to just a few seconds.

Gain PC price/performance — Thanks to 100 million PC users, you can choose the combination of price, performance and features to meet your precise needs.

Attain Windows flexibility — Share real-time data with other Windows programs on the same computer: print production reports from Excel, perform statistical manipulations with Visual Basic, and even use your favorite MMI, simply by accessing real-time control data through DDE.

STEEPLECHASE SOFTWARE

The Easy Choice for PLC Replacement

771 Airport Blvd., P.O. Box 3049, Ann Arbor, Michigan 48106-3049
313-995-3348 Fax: 313-995-7218

Create programs of unlimited size

Because today's PCs provide huge amounts of memory compared to PLCs, running out of memory is nearly impossible. While VLC does have its limits, they far exceed the limits of a PLC.

On a single PC, you can control thousands of I/Os under dozens of independent programs, each consisting of hundreds of flow charts with thousands of elements that span hundreds of pages both vertically and horizontally. (As a practical matter, you would use sub-programs to simplify your flow charts into manageable sizes.)

Debug easily with the built-in real-time simulator

After you design your control system, you can use the built-in simulator to trigger your inputs and watch your flow chart execute. In fact, you can simulate machine response in real time with flow charts that can actually test your program.

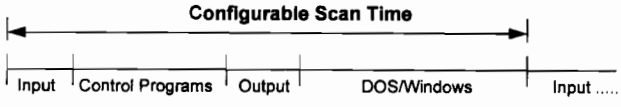
When you're ready, you hook up your I/Os and go on-line. In real time, you can force and monitor all variables and I/O points. If your program hangs up, you can instantly pinpoint which Decision element is waiting. You can find errors fast — often in just seconds!

Connect to multiple I/O families

VLC supports I/O modules from Allen-Bradley, GE Fanuc, APC Seriplex and others. You can mix and match I/O families to meet your application. In fact, you can change I/O families as easily as changing printers in Windows: just select one from a drop-down box.

Set Fast and Precise Scan Times

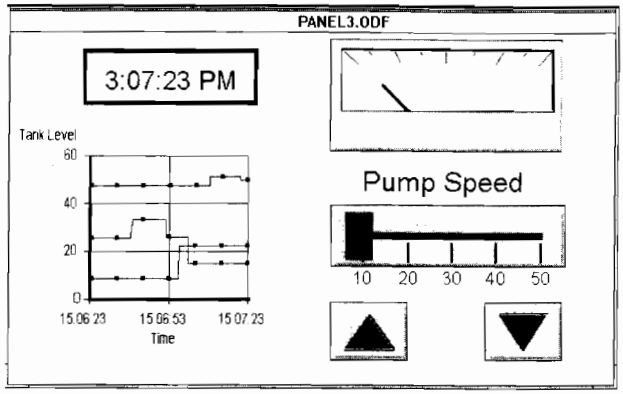
You can set your program's scan rate in 1 millisecond increments from 1 to 500 milliseconds. During each scan, the VLC reads inputs, executes your control programs, and writes outputs. In the time remaining, it executes DOS and Windows applications.



If your control programs exceed the target scan time during any cycle, the DOS and Windows applications are not executed in that cycle. Your control program can also detect the scan overrun error and report it.

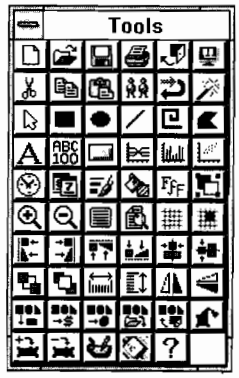
Easy Operator Interface

Steeplechase Software's Visual Logic Controller (VLC) provides Windows-based tools for building easy-to-understand operator screens.



In minutes, you can create a screen consisting of several panel instruments such as push-buttons, indicators, slide switches, panel meters, bar graphs, message displays, multi-pen trends, and more. With its easy operation and on-line help system, you can become a master panel builder in minutes.

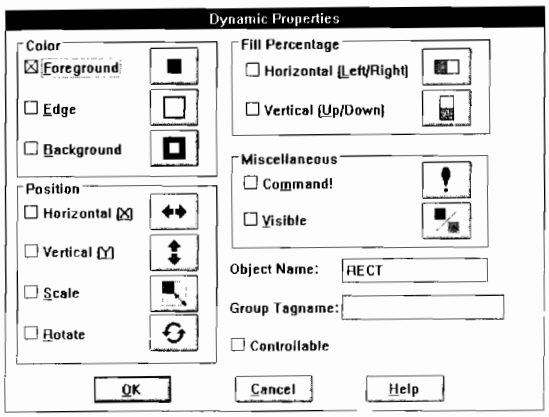
To add a panel instrument, just select it from the library, move it in position, drag on one corner to adjust its size, and then fill in the tag name of the associated I/O point or data. You save considerable time thanks to the common set of tags that you use for both drawing flow charts and configuring operator screens.



Animate your graphics for sizzling displays

You can easily create animated graphics to illustrate your machine or process. Simply use the system's built-in draw functions or import graphics from other programs. Built-in functions allow you to draw rectangles, ovals, polygons and lines, in up to 256 colors, and combine these into complex illustrations.

By double-clicking, you can tie graphics to tags to control color, position, size and fill. Or you can directly import .PCX files created in other Windows-based graphics editors.



Command language extends unlimited flexibility

Within VLC's operator interface software is a powerful command language that offers virtually unlimited additional flexibility. Based on operator commands or control inputs, you can initiate functions such as changing control parameters, displaying another screen, manipulating data files, playing pre-recorded sounds, and executing other Windows applications.

Easy Expansion

VLC provides a DDE server, which enables other Windows applications to share data with VLC's control and operator interface functions. For example, to transfer data to Excel, you simply specify the VLC server and provide the tag name.

You can access an entire universe of WIndows software to enhance your system. You can use DDE to interface to other operator interface packages, statistical process control software, or database collection running on the same PC. Or if you prefer, you can write special functions in Visual BASIC or 'C' that can share data with the VLC through DDE.

Technical Discussion: Real-Time Control and Windows

As an operating system, Windows has earned a reputation for simplicity and elegance. But Windows lacks the high speed and high repeatability that control applications require. So how can Steeplechase Software offer high-speed real-time control under Windows?

You'll find that the answer lies outside Windows; in fact, Microsoft doesn't even have the answer. Intel, the inventor of the microprocessor that started the PC revolution, also developed iRMX, a high-performance, real-time operating system. With 1.9 million systems sold over the last 17 years, it's become a worldwide standard for reliability, compactness and functionality.

VLC runs iRMX as the core of its PLC processor functions. It scans I/Os and controls program execution as high-priority tasks, while running Windows applications as low-priority tasks.

Our flow chart programming and operator interface configuration software are powerful Windows applications that can run on the same computer as real-time control under iRMX. You can run additional Windows applications at the same time, making VLC a truly open solution.

From all appearances, DOS and Windows execute normally. The user interface, file structures, and other applications remain the same.

You don't need to learn any iRMX commands; it's all hidden. Your real-time control programs load with a simple command in AUTOEXEC.BAT.

Only two constraints are required for real-time control. First, Windows must run in standard mode; most applications run in this mode. Second, you cannot load extended memory managers such as EMM386 and Smartdrive.

Execution of Windows applications never affects real-time performance. iRMX protects program and data memory from any misbehavior by DOS and Windows programs. You can even load and shut down Windows without any impact to your control programs.

Regardless of the number or complexity of your Windows programs, iRMX continues to execute your control programs at the highest priority. Windows cannot preempt your control programs. The reverse is not true: if your control programs keep your computer too busy, then Windows applications might run too slowly.

That's a relatively unlikely situation, but if it happens, you can simply upgrade your PC to a more powerful machine. In our experience, a 486DX/33 processor is usually sufficient to run both your control application and your operator interface.

Operator Interface

Screens	View up to 10 separate operator screens at the same time with no limit on the number of elements supported in each screen
Panel instruments	Push-buttons, indicators, slide switches, bar graphs and panel meters are some of the predefined instruments provided. You can design your own instruments and add them to the library.
Graphics	Draw and combine rectangles, ovals, polygons, lines and text
Message displays	Display real-time data or character strings based on control data
Date, Time	Drop date and time displays easily onto any panel
Trending	Display real time trend charts, bar charts and X-Y plots
Tools	Drawing aids simplify manipulating and arranging panel instruments and graphics on the screen: group, ungroup, bring to front, send to back, align, resize, reshape, grids, spacing, flip horizontal and vertical
Imported graphics	Directly import .PCX bitmap graphic files; most Windows graphics applications can provide .PCX output.
Animation	I/O points and registers can control various aspects of an object or collection of objects, including: color (foreground, background and edge), position (horizontal and vertical), size, rotate, fill (horizontal and vertical), visibility
Command language	Based on input from operators, perform a sequence of commands: set/reset/toggle tag, get/set/ramp value, manipulate string, play sound, open/close displays, manipulate file, execute application

Minimum and Recommended PC Configurations

CPU	486DX 33 MHz minimum; Pentium supported
Main memory	8MB minimum
Video	Any Windows resolution; VGA recommended; 1024x768 supported
Hard drive	Requires 12MB of hard disk space for configuration; 4MB for control only
Mouse	Microsoft-compatible mouse recommended for development
MS-DOS	Version 5.0 or later
MS-Windows	Version 3.1; must run in standard mode without memory managers

STEEPLECHASE SOFTWARE

The Easy Choice for PLC Replacement

771 Airport Blvd., P.O. Box 3049, Ann Arbor, Michigan 48106-3049
313-995-3348 Fax: 313-995-7218

© 1994, Steeplechase Software. Visual Logic Controller and VLC are trademarks of Steeplechase Software, Inc. All other marks are trademarks or registered trademarks of their respective owners. All rights reserved. Printed in USA. 10.15.94